Application Form
for
U.S. Research Projects and Expeditions in Greenland

Reserved U.S. Department of State

Reserved Danish Polar Center

Please read carefully DPC's on-line Planning Guide before you start to fill in the form

GENERAL INFORMATION

Title of project or expedition

A Petrological Investigation of the Gakkel Ridge, Arctic Ocean

Total number of participants: 27 Scientists

Sponsors / Name of US agency (contact person)

National Science Foundation - Office of Polar Programs- Arctic Natural Science
Dr. Jane Dionne, Program Manager
Dr. Simon Stephenson

Phone: 703-292-8029 Fax: 703-292-0139

E-mail: jdionne@nsf.gov

Name of responsible project or expedition leader

Prof. Peter J. Michael

Address of responsible project or expedition leader

Department of Geosciences
The University of Tulsa
600 S. College Avenue
Tulsa, OK 74104

Citizenship: United States of America | Date of birth: 5 June 1953

Phone: 918-631-3017 | 918-631-2091

E-mail: pjm@utulsa.edu

Have you applied for a permit before ? Y es ☐ No ☒

Will you need access to the National Park ? Y es ☐ No ☒

If yes, please cf. Cover Letter and Firearm Licence Form

Activity area in Greenland

(Indicate local place names and state geographical longitude and latitude of boundaries and base camp locations. Enclose a map, preferably in scale 1: 250000, with the information)

No work is planned, and not landings will take place in Greenland. All work will be off shore, along a submarine ridge. The part of the study area within Greenland will be along a line (and 50 km to either side of the line) from 84 40'N 7 W. This is within the EEZ but does not come ashore

Points of arrival and departure in the activity area

Arrive: 84 40'N 5 E
Depart: 84 40'N 5E

Planned dates of arrival to and departure from Greenland

Arrive: approximately August 7, 2001
Arrive: approximately August 14, 2001

Which radio equipment will be used in Greenland ?

VHF ☒ HF ☒ ELT/PL ☐ None ☐ Other ☐ please specify

Please see the Radio LIcence application form

LOGISTICS

Co-operation established with scientific institution(s) in Denmark / Greenland
(reference, name, address, telephone, fax, e-mail)

None at present

Contact established to institution or authority in Denmark / Greenland
(reference, name, address, telephone, fax, e-mail)

None at present

Means of transportation to and from the activity area

Polar icebreaker: USCGC HEALY

Means of transportation within the activity area

Polar icebreaker: USCGC HEALY

Will you be bringing firearms ? Yes [X] No [ ]
If yes, you will need firearms licence

Do you plan airdrops ? Yes [ ] No [X]

If you plan airdrop(s), state locality / localities

None planned

Will access to the below locations be required (check appropriate)

Thule Air Base [ ] Station Nord [ ] Daneborg [ ] Mestersvig [ ]

Description of emergency, safety and general equipment to be used

HH-65 helicopters will be deployed for ice reconnaissance
Oceanographic sampling equipment will include dredges, and CTD (Conductivity Temperature, Depth) deployment. Multibeam Echosounders will also be used to determine bottom topography.

Details of construction and dismantling of research structure(s)

None Planned

List of all participants name, address, date of birth, and citizenship

Provide separate list if needed . Changes must be reported to DPC before departure for Greenland

SCIENTIFIC INFORMATION

Scientific category

Atmospheric physics ☐ Biology ☐ Engineering ☐ Geography ☐ Geology ☒

Glaciology ☐ Oceanography ☒ Radio propagation ☐ Remote sensing ☐

Social sciences ☐ Other ☐ please specify below

Objectives of the expedition or objectives and scientific content of the project

(a detailed description may be enclosed on separate sheets). The text must be in a form that lends itself to publication. Max. 100 words)

The objectives of this marine geological expedtion involving USCGC HEALY and the German Polarstern are to recover ingneous rocks from the Gakkel Ridge (Arctic mid-ocean Ridge) northeast of Greenland by dredging and rock coring. We will use multibeam sonar to map the depth and morphology of the ridge. Geochemical analysis of rocks will be integrated with sonar charts and seismic and gravity data (from Polarstern) to understand the structure, thickness and lithology of the crust, and how that crust was formed at the mid-ocean ridge. We will also determine how the depth and extent of mantle melting varies beneath Gakkel Ridge.

Collection of scientific material (Specify any planned samples; type, numbers etc.)

1. Igneous rock samples of no commercial or mineral exploration value will be collected from the Gakkel Ridge at up to 15 locations within Greenland's EEZ. These should include basalts, gabbros and serpentinites. Some sulfide-mineralized rocks may also be collected in the dredge.
2. Up to twenty 15-liter water samples may be taken at various depths.
3. There is very remote possiblity that biological specimans may be recovered in the dredges.

Explosives. If explosives are to be carried or used, details must be stated

Rocket launching, balloons etc. In case of launching, impact area must be indicated and rocket / balloon types must be specified

Possible Helicopter use to and from the ship. No landings are planned on Greenland.

ENVIRONMENTAL OR SOCIAL IMPACT

Details of environmental disruptions which may result from the project or expedition

No social impacts are anticipated. Deep-ocean dredging operations will collect volcanic rocks: no organisms are anticipated. Ice will be broken by the icebreaker. The ship uses a sonar system to map the bottom: its frequency is 12 kHz.

Details of social disruptions which may result from the project or expedition

None anticipated

Additional information on disruptions in general

None anticipated

By my signature below I confirm that I will seek information about the content of the Note Verbale from the Danish Ministry of Foreign Affairs concerning U.S. project and expedition proposals in Greenland. I agree that the information submitted in this application form can be made public

Place and date

Signature of responsible leader